Summary of the Resolution of Pre-Closure Safety Topics

Topic #	Topic Title	Status	NRC/DOE Agreements
3	Identification of Hazards and Initiating Events	N/A	PRE.03.01 - Provide a plan for identification and estimation of aircraft hazards for the license application. This plan should be consistent with the guidelines in NUREG-0800 and other applicable DOE standards, as appropriate, to a nuclear waste repository. Provide a map delineating the vicinity to be considered in the detailed analysis, taking into consideration available information for civilian and military aircraft, including information from federal and local agencies concerning how such activities may reasonably change. Participate in an Appendix 7 meeting to discuss the aircraft hazards plan, initial data collection and analysis, development of the vicinity map, and the appropriate level of detail for analyses to be presented in the license application assessment. DOE agrees with the request and will provide the plan and map in June 2002. DOE agrees to participate in an Appendix 7 meeting which will be scheduled after the plan and map are provided. PRE.03.02 - Provide an analysis, including (1) selection of the design basis tornado, together with the supporting technical basis; (2) selection of credible tornado missile characteristics for the waste package and other structures, systems, and components, together with the technical bases; and (3) analysis of the effects of impact of the design basis tornado missiles or justification for excluding such tornado missiles as credible hazards. DOE agrees to provide the analysis. The analysis will be available in FY03 and be documented in an update to ANL-MGR-SE-000001 and any other appropriate documents.
4	Identification of Event Sequence	N/A	None at this time.
5	Consequence Analysis	N/A	None at this time.

6	Identification of Structures, Systems, and Components Important to Safety; Safety Controls; and Measures to Ensure Availability of the Safety Systems	N/A	PRE.06.01 - Provide the update to Quality Assurance Procedure QAP 2-3. DOE agreed to provide the procedure. The procedure will be available in February 2002. PRE.06.02 - Provide the Integrated Safety Analysis Guide. DOE agreed to provide the guide. The guide will be available in February 2002.
7	Design of Structures, Systems, and Components Important to Safety and Safety Controls	N/A	PRE.07.01 - Provide an update to the Pre-Closure Criticality Analysis Process Report. DOE agreed to provide the report. The report will be available in FY03. PRE.07.02 - Provide the waste package finite element analysis based numerical simulations that represent a significant contribution to DOE's safety case. Provide documentation demonstrating that a sufficient finite element model mesh discretization has been used and the failure criterion adequately bounds the uncertainties associated with effects not explicitly considered in the analysis. These uncertainties include but are not limited to: (1) residual and differential thermal expansion stresses, (2) strain rate effects, (3) dimensional and material variability, (4) seismic effects on ground motion, (5) initial tip-over velocities, and (6) sliding and inertial effects of the waste package contents, etc. In addition, document the loads and boundary conditions used in the models and provide the technical bases and or rationale for them. DOE agreed to provide the information. The information will be available in FY03 and documented in Waste Package Design Methodology Report.

7	Design of Structures, Systems, and Components Important to Safety and Safety Controls - Cont.	N/A	PRE.07.03 - Demonstrate that the allowed microstructural and compositional variations of alloy 22 base metal and the allowed compositional variations in the weld filler metals used in the fabrication of the waste packages do not result in unacceptable waste package mechanical properties. DOE will provide justification that the ASME code case for alloy 22 results in acceptable waste package mechanical properties considering allowed microstructural and compositional variations of alloy 22 base metal and the allowed compositional variations in the weld filler metals used in the fabrication of the waste packages. DOE agrees to provide the information in FY03 and document the information in the Waste Package Design Methodology Report. PRE.07.04 - Demonstrate that the non-destructive evaluation methods used to inspect the alloy 22 and 316 nuclear grade plate material and closure welds are sufficient and are capable of detecting all defects that may alter waste package mechanical properties. DOE will provide justification that the non-destructive evaluation methods used to inspect the alloy 22 and 316 nuclear grade plate material and welds are sufficient and are capable of detecting defects that may adversely affect waste package pre-closure structural performance. DOE agrees to provide the information in FY03 and document the information in the Waste Package Operations Fabrication Process Report. PRE.07.05 - Provide justification that the mechanical properties of the disposal container fabrication and waste package closure welds are adequately represented considering the (1) range of welding methods used to construct the disposal containers, (2) post weld annealing and stress mitigation processes, and (3) post weld repairs. DOE agrees to provide the information in FY03 and document the information in the Waste Package Operations Fabrication Process Report.